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What is claimed is:

1. A cooling system comprising:

5 at least one component generating heat and
required to be cooled;

 at least one cold plate evaporator device
in thermal contact with the at least one component;

 a liquid refrigerant pump having at least
an inlet;

10 a vaporizable refrigerant circulated by
the liquid refrigerant pump to the at least one cold
plate evaporator device, whereby the refrigerant is at
least partially evaporated by the heat generated by
the at least one component, creating a vapor;

15 a condenser for condensing the partially
evaporated refrigerant vapor, creating a single liquid
phase;

 a first liquid conduit for receiving the
vaporizable refrigerant from the liquid refrigerant
20 pump, said first liquid conduit connected to the at
least one cold plate evaporator device;

 a second conduit from the at least one
cold plate evaporator device, said second conduit
connected to the condenser; and

25 a liquid return line from the condenser to
the inlet of the refrigerant pump.

2. A cooling system as claimed in claim 1 wherein an
additional volume is contained in the cooling system
30 to provide for storage of liquid refrigerant when
liquid refrigerant is displaced in the cold plate
evaporator device and the condenser by vapor during
the cooling operation.

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3. A cooling system as claimed in claim 2 wherein the additional volume is located between the refrigerant pump and the cold plate evaporator device.

5 4. A cooling system as claimed in claim 2 wherein the additional volume is located between the cold plate evaporator device and the condenser.

10 5. A cooling system as claimed in claim 2 wherein the additional volume is located between the condenser and the refrigerant pump.

15 6. A cooling system as claimed in claim 1 wherein the at least one cold plate evaporator device comprises at least two cold plate evaporator devices.

20 7. A cooling system as claimed in claim 6 wherein the at least two cold plate evaporator devices are in series flow.

8. A cooling system as claimed in claim 6 wherein the at least two cold plate evaporator devices are in parallel flow.

25 9. A cooling system as claimed in claim 1 wherein the condenser comprises an air cooled condenser.

30 10. A cooling system as claimed in claim 1 wherein the condenser comprises a water cooled condenser.

11. A cooling system as claimed in claim 1 wherein the condenser comprises a liquid cooled condenser.

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12. A cooling system as claimed in claim 1 wherein the condenser comprises an evaporative condenser.

5 13. A cooling system as claimed in claim 1 wherein the liquid refrigerant pump comprises a hermetic liquid pump.

10 14. A cooling system as claimed in claim 1 wherein the refrigerant comprises R-134a refrigerant.

15 15. A cooling system as claimed in claim 1 wherein the refrigerant comprises a vaporizable refrigerant.

16. A cooling system as claimed in claim 1 wherein a condensing temperature of the refrigerant is controlled so as to be above the ambient dew point where the cold plate evaporator device is located.